

# Soft Tissue Injuries

as Defined by

## Bureau of Medicine and Surgery



- The most common injuries (trauma) seen in a first aid setting are soft tissue injuries with bleeding and shock. Injuries that cause a break in the skin, underlying soft tissue, or other body membrane are known as a wound. Injuries to the soft tissues vary from bruises (contusion) to serious cuts (lacerations) and puncture wounds in which the object may remain in the wound (impaled objects). The two main threats with these injuries are bleeding and infection



# Classification of Wounds

- Wounds are classified according to their general condition, size, location, the manner in which the skin or tissue is broken, and the agent that caused the wound. It is usually necessary for you to consider some or all of these factors in order to determine what first aid treatment is appropriate.



# General Condition

- If the wound is new, first aid consists mainly of controlling the bleeding, treating for shock, and reducing the risk of infection. If the wound is old and infected, first aid consists of keeping the casualty quiet, elevating the injured part, and applying a warm wet dressing. If the wound contains foreign objects, first aid may consist of removing the objects if they are not deep. **Do not remove impaled objects or objects embedded in the eyes or skull.**



# Size

- Generally, large wounds are more serious than small ones and they usually involve severe bleeding, more damage to the underlying tissues and organs, and a greater degree of shock. However, small wounds are sometimes more dangerous than large ones: they may become infected more readily due to neglect. The depth of a wound also is important because it may lead to a complete (through & through) perforation of an organ or the body, with the additional complication of an entrance and exit wound.



# Location

- Since a wound can cause serious damage to deep structures, as well as to the skin and tissues below it, the location is an important consideration. A knife wound to the chest is likely to puncture a lung and cause difficulty breathing. The same type of wound in the abdomen can cause a life-threatening infection, internal bleeding, or puncture the intestines, liver, or other vital organs. A bullet wound to the head may cause brain damage, but a bullet wound to the arm or leg, may cause no serious damage.



# Types of Wounds

- As the first line of defense against most injuries, soft tissues are most often damaged. There are two types of soft tissue injuries: open and closed. An open wound is one in which the skin surface has been broken, a closed wound is where the skin surface is unbroken but underlying tissues have been damaged.



# Closed Wounds

- A blunt object that strikes the body will damage tissues beneath the skin. When the damage is minor, the wound is called a bruise (contusion). When the tissue has extensive damage, blood and fluid collect under the skin causing discoloration (ecchymosis), swelling (edema), and pain. First aid consists of applying ice or cold packs to reduce swelling and relieve discomfort. **To guard against frostbite, never apply ice or cold packs directly to the skin.**





# Closed Soft Tissue Injuries

- **Hematomas:** the result of a severe blunt injury with extensive soft tissue damage, tearing of large blood vessels, and pooling of large amounts of blood below the skin.





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# Open Soft Tissue Injuries

- The protective layer of the skin has been damaged. This can cause serious internal and external bleeding, infection . When you consider the way in which the skin or tissue has been broken, there are six basic types of open wounds: abrasions, amputations, avulsions, incisions, lacerations, and punctures. Many wounds are a combination of two or more of these types.



# Open Soft Tissue Injuries (cont.)

- **Abrasions**
- Abrasions are caused when the skin is rubbed or scraped off. Rope burns, floor burns, and skinned knees or elbows are common examples of abrasions. Abrasions easily can become infected, because dirt and germs are usually ground into the tissues. There is normally minimal bleeding or oozing of clear fluid.





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# Open Soft Tissue Injuries (cont.)

- **Amputations**

- the non-surgical removal of the fingers, toes, hands, feet, arms, legs, and ears from the body. Bleeding is heavy and normally requires a tourniquet, to control the blood flow. There are three types of amputation:
  - 1. Complete - Body part is completely torn off (severed).
  - 2. Partial - More than 50% of the body part is torn off.
  - 3. De-gloving - Skin and tissue are torn away from body part.



# Open Soft Tissue Injuries (cont.)

- **Amputations Treatment**

1. **Establish and maintain** the airway, breathing, and circulation (ABCs).
2. **Control bleeding** with direct pressure, elevation, indirect pressure, or tourniquet **only as a last resort, never remove or loosen a tourniquet once it has been applied.**
3. **Apply dressing** to the stump with an ace wrap to replace direct pressure.
4. **Treat for shock.**
5. **Request medical assistance immediately.**







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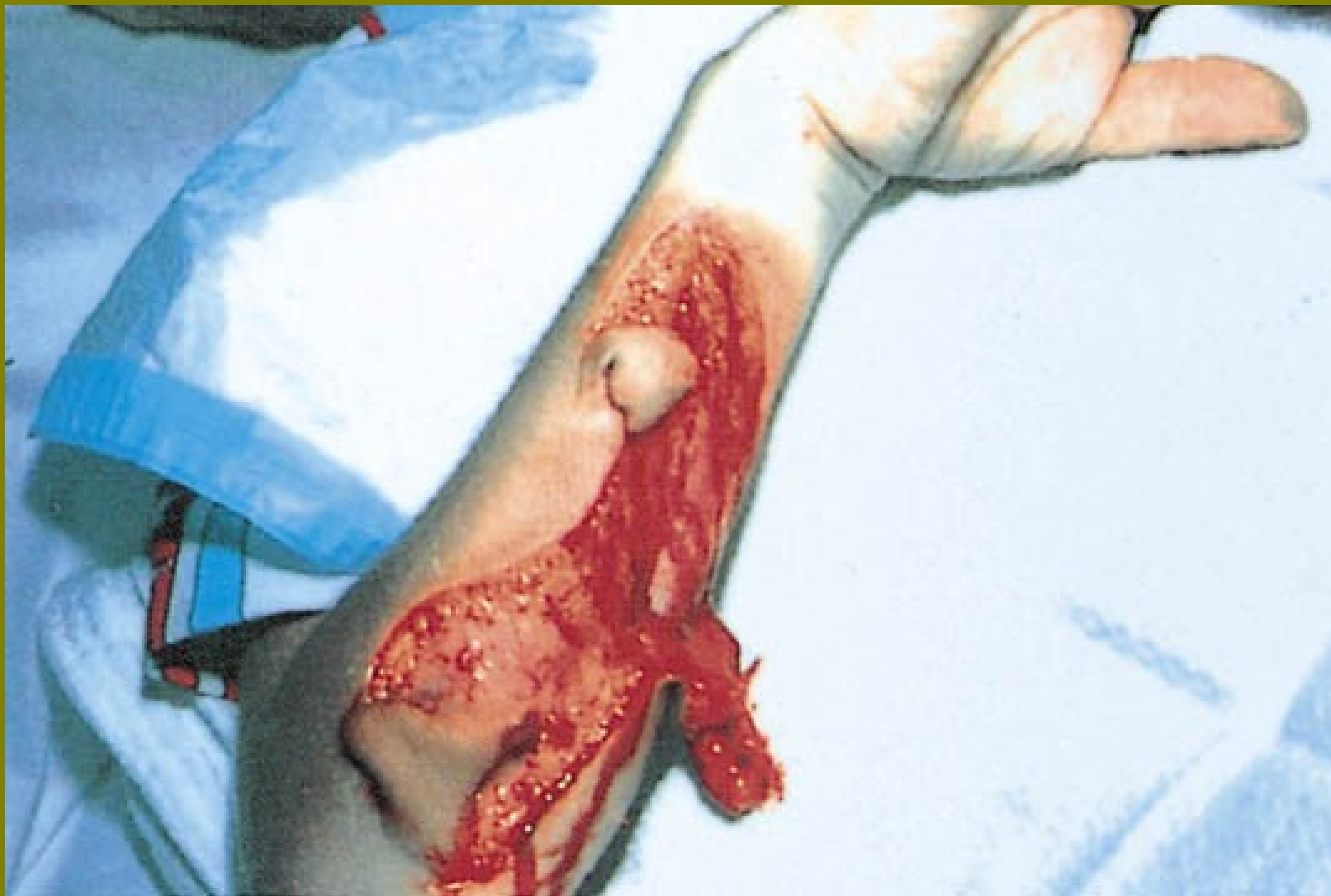


# Open Soft Tissue Injuries (cont.)

- **Avulsions**

- An avulsion is an injury in which the skin is torn completely away from a body part or is left hanging as a flap. Usually, there is severe bleeding. If possible, obtain the part that has been torn away, rinse it in water, wrap it in a dry sterile gauze, seal it in a plastic bag, and send it on ice with the casualty. **Do not allow part to freeze and do not submerge in water.** If the skin is still attached, fold the flap back into its normal position.





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# Open Soft Tissue Injuries (cont.)

- **Incisions**

- Wounds made by sharp cutting instruments such as knives, razors, or broken glass. Incisions bleed freely because the blood vessels are cut cleanly, without ragged edges.

- **Lacerations**

- Wounds that are torn, rather than cut. They have ragged, irregular edges and torn tissue underneath. Usually made by a blunt, rather than a sharp, object. A wound made by a dull knife is more likely to be a laceration than an incision.



# Laceration



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# Open Soft Tissue Injuries (cont.)

- **Punctures**

- caused by objects that enter the skin while leaving a surface opening. Wounds made by nails, needles, wire, knives, and bullets are normally punctures. Small puncture wounds usually do not bleed freely; however, large puncture wounds may cause severe internal bleeding. Perforation (through & through) is a variation, it is the result of a penetrating object entering, passing through, and exiting the body.





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# Treatment of Soft Tissue Injuries

- **Treatment of Wounds**

- First aid treatment for all wounds consists of establishing and adequate open airway, ensure the victim is breathing, controlling the flow of blood, treating for shock, and preventing infection. When providing first aid to casualty with multiple injuries, treat the wounds that appear to be life-threatening first. Since most of the body is covered by clothing, carefully examine the entire body for bleeding. When necessary, tear or cut clothing away from the wound because excessive movement of the injured part will cause pain and additional damage.





# Treatment of Soft Tissue Injuries

- **Bleeding**

- Control bleeding, by direct pressure and elevation. Indirect pressure and the use of a tourniquet should be used only if direct pressure and elevation do not control the bleeding. Bleeding control is discussed further in the Hemorrhage Control Class . A protective covering (dressing) that is properly applied should adequately control the bleeding. In cases of severe bleeding, you may need to double the dressing. Never remove a dressing that is soaked with blood to replace it with another; just place the new dressing over the old one.



# Treatment of Soft Tissue Injuries

- **Shock**
  - Shock may be severe in a casualty who has lost a large amount of blood or suffered a serious injury. The causes and treatment of shock are discussed further in Shock course.



# Treatment of Soft Tissue Injuries

- **Infection**

- Infections can occur in any wound. The signs of infection are tenderness, redness, heat, swelling, and a discharge. Serious infections develop red streaks that lead from the wound to the heart. Infections are dangerous, infections spread easily into the bloodstream, causing blood poisoning (septicemia), and into the brain, causing a collection of pus (abscess) and infection. Small wounds should be washed immediately with soap and water, dried, and treated with an application of a mild, non-irritating antiseptic. Apply a dressing if necessary. Make no attempt to wash a large wound and do not apply an antiseptic. Cover the wound with a dry, sterile dressing. Further treatment of large wounds should be conducted by medical personnel. **All puncture wounds must be evaluated by medical personnel.**



***Are there any questions***



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